

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

- 1 1. (original) An IEEE 802.11 compliant wireless local area network (WLAN)
2 multiprotocol device comprising:
3 one frequency band agile, complementary code keying (CCK) and orthogonal
4 frequency division multiplex (OFDM) modulation-capable radio;
5 a data flow structure framework which organizes and routes transmitted and
6 received data packets within the multiprotocol device; and
7 a medium access control (MAC) mechanism which wirelessly exchanges the data
8 packets between the multiprotocol device and other IEEE 802.11 compliant devices,
9 wherein the device is capable of engaging in simultaneous distinct channel
10 IEEE 802.11a, 802.11b and 802.11g communications.

- 1 2. (original) The multiprotocol device of Claim 1 wherein:
2 the data flow structure comprises one wired portal and two or more wireless
3 portals, each portal consisting of a transmit queue and an associated receive buffer; and
4 interconnections between distinct pairs of wired and wireless portal receive
5 buffers and transmit queues such that any data packet externally deposited at any one
6 portal receive buffer is internally routed to one appropriate other portal transmit queue,
7 and

8 the MAC mechanism provides for distinct, sequential time intervals assigned to
9 each wireless portal, only during which data packets can be transmitted from or received
10 by said wireless portal, and where each time interval includes a beginning and end
11 indicated by specific, standard 802.11 MAC management or control data packets.

1 3. (original) The multiprotocol device of Claim 2, wherein
2 one wired portal and two wireless portals are used for internal datagram
3 routing, and
4 wherein all wireless communications conforming to the IEEE 802.11a
5 standard are routed through one wireless portal on one 5 GHz band RF channel, and
6 wherein all wireless communications conforming to the IEEE 802.11b/g standards are
7 routed through the other wireless portal on one 2.4 GHz band RF channel, and
8 wherein the multiprotocol device, referred to as a multiprotocol access point,
9 complies with all relevant IEEE 802.11 standards regarding access point devices.

1 4. (original) The multiprotocol device of Claim 2 wherein the multiprotocol device
2 is configured to communicate wirelessly with an upstream multiprotocol device, and
3 wherein three wireless portals are used for internal datagram routing, and
4 wherein all wireless communications routed through the first of the three
5 wireless portals conform to a designated IEEE 802.11a or 802.11b/g standard and
6 occur on the same RF channel as that used by a wireless portal belonging to the
7 upstream multiprotocol device, and

8 wherein all wireless communications routed through the second of the three
9 wireless portals conform to the IEEE 802.11a standard and occur on a 5 GHz band
10 RF channel distinct from the channel used by the first wireless portal, and

11 wherein all wireless communications routed through the third of the three
12 wireless portals conform to the IEEE802.11b/g standard and occur on a 2.4 GHz band
13 RF channel distinct from the channel used by the first wireless portal, and

14 wherein the multiprotocol device, referred to as a multiprotocol repeater,
15 complies with all relevant IEEE 802.11 standards regarding access point devices.

1 5. (currently amended) A combination multiprotocol device comprising:

2 a first IEEE 802.11 compliant wireless local area network (WLAN) multiprotocol
3 device multiprotocol device of Claim 2 and

4 a second IEEE 802.11 compliant wireless local area network (WLAN)
5 multiprotocol device multiprotocol device of Claim 2, the second multiprotocol device
6 being different from the first multiprotocol device,

7 wherein each of the first and second multiprotocol devices comprises:

8 one frequency band agile, complementary code keying (CCK) and
9 orthogonal frequency division multiplex (OFDM) modulation-capable
10 radio;

11 a data flow structure framework which organizes and routes
12 transmitted and received data packets within the multiprotocol device; and

13 a medium access control (MAC) mechanism which wirelessly
14 exchanges the data packets between the multiprotocol device and other
15 IEEE 802.11 compliant devices,
16 wherein the device is capable of engaging in simultaneous distinct
17 channel IEEE 802.11a, 802.11b and 802.11g communications; and
18 wherein the data flow structure comprises one wired portal and two
19 or more wireless portals, each portal consisting of a transmit queue and an
20 associated receive buffer; and interconnections between distinct pairs of
21 wired and wireless portal receive buffers and transmit queues such that
22 any data packet externally deposited at any one portal receive buffer is
23 internally routed to one appropriate other portal transmit queue, and
24 the MAC mechanism provides for distinct, sequential time
25 intervals assigned to each wireless portal, only during which data packets
26 can be transmitted from or received by said wireless portal, and where
27 each time interval includes a beginning and end indicated by specific,
28 standard 802.11 MAC management or control data packets;
29 wherein one of the multiprotocol devices is configured to communicate wirelessly
30 with one separate upstream multiprotocol device and
31 wherein one of the multiprotocol devices uses one wired portal and one wireless
32 portal for internal datagram routing, and
33 wherein the other multiprotocol device uses one wired portal and two wireless
34 portals for internal datagram routing, and

35 wherein the multiprotocol devices are externally interconnected at their wired
36 portals, and

37 wherein all wireless communications routed through one of the combination
38 multiprotocol device's wireless portals conform to one designated IEEE 802.11a or
39 802.11b/g standard and occur within the same RF channel as that used by a wireless
40 portal belonging to the upstream multiprotocol device, and

41 wherein all wireless communications routed through another of the combination
42 multiprotocol device's wireless portals conform to the IEEE 802.11a standard and occur
43 within a 5 GHz band RF channel distinct from the channel used by the first wireless
44 portal, and

45 wherein all wireless communications routed through the remaining combination
46 multiprotocol device's wireless portals conform to the IEEE802.11b/g standard and occur
47 within one 2.4 GHz band RF channel distinct from the channel used by the first wireless
48 portal, and

49 wherein the combination multiprotocol device, referred to as a high capacity
50 multiprotocol repeater, complies with all relevant IEEE 802.11 standards regarding
51 access point devices.